

WHAT IS CLAIMED IS:

1                   1.     A filter circuit apparatus for suppression of spurious signals in a  
2 superheterodyne circuit for receiving communication in channels comprising:  
3                   a first active twin-T filter in a first signal path defining a first sharp notch at  
4 the center a second adjacent channel; and  
5                   a first passive twin-T filter section coupled to receive output of the first active  
6 twin-T filter, defining a second sharp notch at the center of a next adjacent channel, to  
7 suppress spurious signals at frequencies of modulation product.

1                   2.     The apparatus of claim 1 wherein said superheterodyne circuit employs  
an in-phase and a quadrature phase signal path, said first signal path corresponding to said  
first signal path, the apparatus further including:

                  a second active twin-T filter in a second signal path defining said first sharp  
notch at the center the second adjacent channel, said second signal path corresponding to a  
quadrature phase signal path; and

                  a second passive twin-T filter section coupled to receive output of the second  
active twin-T filter, defining said second sharp notch at the center of a next adjacent channel,  
to suppress spurious signals at frequencies of modulation product.

1                   3.     The circuit according to claim 2 wherein said superheterodyne circuit  
2 employs differentials feed in each one of said first signal path and said second signal path, the  
3 apparatus further including:

4                   a third active twin-T filter in a third signal path defining said first sharp notch  
5 at the center the second adjacent channel, said third signal path comprising a differential of  
6 said in-phase signal path;

7                   a third passive twin-T filter section coupled to receive output of the third  
8 active twin-T filter, defining said second sharp notch at the center of a next adjacent channel,  
9 to suppress spurious signals at frequencies of modulation product, said third passive twin-T  
10 section being cross coupled with said first passive twin-T section;

11                  a fourth active twin-T filter in a fourth signal path defining said first sharp  
12 notch at the center the second adjacent channel, said fourth signal path comprising a  
13 differential of said quadrature-phase signal path; and

14                  a fourth passive twin-T filter section coupled to receive output of the fourth  
15 active twin-T filter, defining said second sharp notch at the center of a next adjacent channel,

16 to suppress spurious signals at frequencies of modulation product, said fourth passive twin-T  
17 section being cross coupled with said second passive twin-T section.

1 4. The apparatus according to claim 3 wherein each active twin T section  
2 is in active bootstrap configuration.

1 5. The apparatus according to claim 1 wherein the active twin T section is  
2 in active bootstrap configuration.

1 6. A method for processing multiple signal modes according to different  
2 radio standards of a received RF signal, comprising:

3 performing downconversion of the received RF signal to produce analog I and  
4 Q signals; and for each of the analog I signal and the analog Q signal, filtering out unwanted  
5 signals by:

6 for a first standard, processing the analog signal using a first passive  
7 notch filter to produce a first filtered signal; and

8 for a second standard, processing the analog signal using an active  
9 notch filter to produce a second filtered signal;

10 wherein the active notch filter exhibits smaller group delay than the  
passive notch filter.

1 7. The method according to claim 6 further includes, for the second  
2 standard, processing the second filtered signal using a second passive notch filter to produce  
3 a third filtered signal.